

**WEST****End of Result Set**

Generate Collection

L6: Entry 4 of 4

File: USPT

May 5, 1998

DOCUMENT-IDENTIFIER: US 5747293 A

TITLE: Intimin-like proteins of E. coli

## BSPR:

The EPEC or EHEC gene product that mediates intimate attachment to epithelial cells is a protein called intimin (Int.sub.EPEC and Int.sub.EHEC respectively), which is a 94 kdal outer membrane protein encoded by the chromosomal eaeA gene. The amino-terminis of Int.sub.EPEC and Int.sub.EHEC have a high degree of homology with the eae gene products of Citrobacter freundii biotype 4280 (Int.sub.CF) and also with the amino terminus of invasin (Inv), the product of inv gene of Yersinia pseudotuberculosis (Inv.sub.YP) and Yersinia enterocolitica (Inv.sub.YE).

**WEST**

Generate Collection

L7: Entry 1 of 6

File: USPT

Apr 17, 2001

DOCUMENT-IDENTIFIER: US 6218147 B1  
TITLE: Haemophilus adhesin protein

## DEPR:

The anti-adhesin antibodies of the invention were also effective to prevent the binding of enteropathic E. coli (EPEC) organisms to mammalian epithelial cells. These antibodies can be used therapeutically, for passive immunisation against diseases caused by EPEC.

DIALOG

RANK charge added; see HELP FILES 399.

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

(c) 1998 Inst for Sci Info

File 442:AMA Journals 1982-2001/Jul B3

(c)2001 Amer Med Assn -FARS/DARS apply

\*File 442: UDs have been adjusted to reflect the current months data. See Help News442 for details. PY,PD sort temporarily do not work.

File 444:New England Journal of Med. 1985-2001/Aug W1

(c) 2001 Mass. Med. Soc.

File 457:The Lancet 1986-2000/Oct W1

(c) 2000 The Lancet, Ltd.

\*File 457: Due to production changes at The Lancet, the updating of this file is delayed.

File 467:ExtraMED(tm) 2000/Dec

(c) 2001 Informania Ltd.

Set Items Description

--- -----

?ds

Set	Items	Description
S1	918052	(YERSINIA? OR CITROBACTER? OR EHEC? OR EPEC? OR O157? OR O-157? OR HAFNIA? OR COLI OR ESCHERICHIA?)/TI,DE
S2	38511	EAE OR EAEB OR INTIMIN? OR INVASIN? OR ((94 OR 95 OR 96 OR 97) (3N) (KDA OR KD OR KILODALTON? OR DALTON? OR MW)) OR (ATTACH? (3N) EFFAC?)
S3	4750	S1 AND S2
S4	2611	S3/1997:2001
S5	2139	S3 NOT S4
S6	291	S5 AND (IMMUNE? OR PASSIVE? OR COLOST? OR MILK? OR TRANSFER? OR SIGA OR IGA OR IVIG OR IGIV)
?t	s6/9/49 218 223 225 226 110 118 122 124 127 173 207 209 215 217 230 235 256	

Set Items Description

---  
?s (YERSINIA? OR CITROBACTER? OR EHEC? OR EPEC? OR O157? OR O157? OR HAFNIA? OR COLI or  
escherichia?)/ti,de

Processing

Processed 10 of 30 files ...

>>>Term "DE" is not defined in one or more files

Completed processing all files

37889 YERSINIA?/TI,DE  
11609 CITROBACTER?/TI,DE  
668 EHEC?/TI,DE  
727 EPEC?/TI,DE  
12316 O157?/TI,DE  
1516 O157?/TI,DE  
2298 HAFNIA?/TI,DE  
872259 COLI/TI,DE  
840897 ESCHERICHIA?/TI,DE

S1 918052 (YERSINIA? OR CITROBACTER? OR EHEC? OR EPEC? OR O157? OR  
O157? OR HAFNIA? OR COLI OR ESCHERICHIA?)/TI,DE

?s eae or eaeb or intimin? or invasin? or ((94 or 95 or 96 or 97) (3n) (kda or kd or ki  
lod Dalton? or Dalton? or mw)) or (attach? (3n) effac?)

Processed 10 of 30 files ...

Processing

Completed processing all files

16239 EAE  
166 EAEB  
1223 INTIMIN?  
1818 INVASIN?  
488934 94  
1056742 95  
562752 96  
463802 97  
444793 KDA  
173637 KD  
43901 KILODALTON?  
63065 DALTON?  
130180 MW  
18696 (((94 OR 95) OR 96) OR 97) (3N) (((KDA OR KD) OR  
KILODALTON?) OR DALTON?) OR MW)  
488855 ATTACH?  
8268 EFFAC?  
2097 ATTACH? (3N) EFFAC?  
S2 38511 EAE OR EAEB OR INTIMIN? OR INVASIN? OR ((94 OR 95 OR 96  
OR 97) (3N) (KDA OR KD OR KILODALTON? OR DALTON? OR MW))  
OR (ATTACH? (3N) EFFAC?)

?s s1 and s2

918052 S1  
38511 S2  
S3 4750 S1 AND S2

?s s3/1997:2001

>>>One or more prefixes are unsupported

>>> or undefined in one or more files.

>>>Year ranges not supported in one or more files

Processed 10 of 30 files ...

Processing

Completed processing all files

4699 S3  
22592851 PY=1997 : PY=2001  
S4 2611 S3/1997:2001

?s s3 not s4

4750 S3  
2611 S4  
S5 2139 S3 NOT S4

?s

>>>Null command ignored

?ds

Set	Items	Description
S1	918052	(YERSINIA? OR CITROBACTER? OR EHEC? OR EPEC? OR O157? OR O-157? OR HAFNIA? OR COLI OR ESCHERICHIA?)/TI,DE
S2	38511	EAE OR EAEB OR INTIMIN? OR INVASIN? OR ((94 OR 95 OR 96 OR 97) (3N) (KDA OR KD OR KILODALTON? OR DALTON? OR MW)) OR (ATT-ACH? (3N) EFFAC?)
S3	4750	S1 AND S2
S4	2611	S3/1997:2001
S5	2139	S3 NOT S4

?s s5 and (immune? or passive? or colost? or milk? or transfer? or siga or iga or ivig or igiv)

Processed 10 of 30 files ...

**WEST**

## Freeform Search

**Database:**

US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
JPO Abstracts Database  
EPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

**Term:**

110 and 0157.clm.

**Display:**  **Documents in Display Format:**  **Starting with Number** **Generate:** ☐ Hit List ☒ Hit Count ☐ Image

### Search History

**Today's Date: 8/8/2001**

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	('4141970'  '6218147')[PN]	2	<u>L14</u>
USPT	('6218147'  '4141970')[PN]	2	<u>L13</u>
USPT	110 and 0157.clm.	1	<u>L12</u>
USPT	110 and (yersinia or citrobacter or ehec or epec).clm.	0	<u>L11</u>
USPT	passiv\$.clm. and (immun\$ or vaccin\$ or therap\$ or treat\$).clm.	894	<u>L10</u>
USPT	18 not 17	51	<u>L9</u>
USPT	(yersinia or citrobacter or ehec or epec) same transfer	51	<u>L8</u>
USPT	(yersinia or citrobacter or ehec or epec) same passive	6	<u>L7</u>
USPT	invasin same intimin	4	<u>L6</u>
USPT	(eae or eaeb or eaea or intimin or ivasin or ipa).clm.	86	<u>L5</u>
USPT	13 and 12	45	<u>L4</u>
USPT	(attach\$ or adhesin or adhesion or eae or eaeb or intimin or invasin or ipa)	1182074	<u>L3</u>
USPT	(ehec or epec or o157\$ or 0157\$ or coli or enteropatho\$ or enterohemo\$ or hamberger\$) and 11	72	<u>L2</u>
USPT	(mother or cow or lactat\$ or sow or host or parent).clm. and (baby or infant or newborn or calf or piglet or patient).clm. and (antibod\$ or immunglob\$ or clostrum or milk\$ or transfer\$ or passive\$).clm.	182	<u>L1</u>

**WEST****Search Results - Record(s) 1 through 2 of 2 returned.**

L14: Entry 1 of 2

File: USPT

Apr 17, 2001

US-PAT-NO: 6218147

DOCUMENT-IDENTIFIER: US 6218147 B1

TITLE: Haemophilus adhesin protein

DATE-ISSUED: April 17, 2001

US-CL-CURRENT: 435/69.3; 424/256.1, 435/243, 435/252.3, 435/69.1, 435/71.1, 536/23.1,  
536/23.7

INT-CL: [7] C12N 15/09

L14: Entry 2 of 2

File: USPT

Feb 27, 1979

US-PAT-NO: 4141970

DOCUMENT-IDENTIFIER: US 4141970 A

TITLE: Method for enhancing the resistance of new born mammalian young to  
gastro-intestinal infections

DATE-ISSUED: February 27, 1979

US-CL-CURRENT: 424/282.1; 424/257.1

INT-CL: [2] A61K 39/02



Adherence of Vero cytotoxin-producing Escherichia coli O157:H7 to human epithelial cells in tissue culture: role of outer membranes as bacterial adhesins.

Sherman PM; Soni R

Department of Paediatrics, Hospital for Sick Children, University of Toronto, Ontario, Canada.

Journal of medical microbiology (ENGLAND) May 1988, 26 (1) p11-7,  
ISSN 0022-2615 Journal Code: J2N

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

Subfile: INDEX MEDICUS

Escherichia coli of serotype O157:H7 are Vero cytotoxin-producing enteric pathogens that have recently been associated with outbreaks of haemorrhagic colitis, sporadic cases of haemorrhagic colitis and with the haemolytic uraemic syndrome. The organisms demonstrate **attaching** and **effacing** binding to the caecum and colon of orally infected gnotobiotic piglets, chickens and infant rabbits. E. coli O157:H7 cells adhere to the surface but do not invade the cytoplasm of human epithelial cell lines in tissue culture. Since outer membranes, lipopolysaccharides and flagella have been identified as bacterial adhesins on other enteric pathogens, we evaluated their roles in the binding of non-fimbriated E. coli O157:H7 to HEp-2 cells. Hyperimmune rabbit antisera were prepared to whole cells, outer membranes and flagella of E. coli O157:H7. The presence of antibody to homologous antigen was confirmed by dot blot immunoassays. Both antisera and purified outer membrane and flagellar antigens were co-incubated with bacteria and HEp-2 cells to quantitate inhibition of bacterial attachment. Adherence of E. coli O157:H7 to tissue culture cells was inhibited by rabbit antisera raised to whole cells (76.0 +/- 5.6% inhibition compared with bacterial adherence in the presence of pre-immune rabbit serum) and outer membranes (69.2 +/- 3.4% inhibition). In contrast, inhibition of bacterial attachment to tissue-culture cells was significantly less when two antisera to H7 flagella were co-incubated with E. coli O157:H7 and HEp-2 cells (12.4 +/- 7.6%; 6.0 +/- 3.5% inhibition). Outer-membrane extracts inhibited adherence to E. coli O157:H7 to HEp-2 cells in a concentration dependent manner whereas isolated flagella and lipopolysaccharide antigens did not inhibit bacterial attachment. (ABSTRACT TRUNCATED AT 250 WORDS)

Tags: Human; Support, Non-U.S. Gov't

Descriptors: \*Bacterial Adhesion; \*Cell Membrane--physiology--PH; \*Escherichia coli--pathogenicity--PY; Bacterial Toxins--biosynthesis--BI; Cells, Cultured; Electrophoresis, Polyacrylamide Gel; Epithelium--microbiology--MI; Flagella--physiology--PH; Immune Sera ; Lipopolysaccharides--physiology--PH; Shiga-Like Toxin I

CAS Registry No.: 0 (Bacterial Toxins); 0 (Immune Sera); 0 (Lipopolysaccharides); 0 (Shiga-Like Toxin I)

Record Date Created: 19880630

?logoff hold

**Inhibition of enteropathogenic Escherichia coli (EPEC) adhesion to HeLa cells by human colostrum: Detection of specific sIgA related to EPEC outer-membrane proteins.**

**AUTHOR:** Camara Lilia M; Carbonare Solange B; Silva M Lourdes M; Carneiro-Sampaio Magda M S(a)

**AUTHOR ADDRESS:** (a)Dep. de Imunol., Inst. de Ciencias Biomedicas, 05508-900 Universidade de Sao Paulo, Sao Paulo\*\*Brazil

**JOURNAL:** International Archives of Allergy and Immunology 103 (3):p307-310 1994

**ISSN:** 1018-2438

**DOCUMENT TYPE:** Article

**RECORD TYPE:** Abstract

**LANGUAGE:** English

**ABSTRACT:** Human **colostrum** and a high molecular weight **colostrum** fraction (HMWF; gt 14,000 D) prevented the adhesion of localized adherent (LA+) O111:H-enteropathogenic Escherichia coli (EPEC) to HeLa cells. This effect was abolished after absorption with an O111:H-LA+ EPEC strain, but absorption with a LA- strain of same serotype had no effect on the process. A low molecular weight fraction (lt 14,000 D), absorbed or not with LA+ or LA- bacterial strains, did not inhibit the adherence of E. coli to HeLa cells. **IgA** -depleted **colostrum** had no inhibitory effect on bacterial adhesion, demonstrating the critical role of this protein in the phenomenon. Heat inactivation of whole **colostrum** did not significantly modify the inhibition adherence levels. Immunoblots of O111: H- LA+ strain outer-membrane complex reacted with **colostrum** and HMWF showing that **IgA** antibodies were predominantly reactive with a 94 -kD protein. These data confirm and extend observations about **colostrum** **sIgA** participation in adhesion inhibition of EPEC to HeLa cells and its response to a 94 -kD outer-membrane protein.

Inhibition of localized adhesion of enteropathogenic *Escherichia coli* to HEp-2 cells by immunoglobulin and oligosaccharide fractions of human colostrum and breast milk.

Cravioto A; Tello A; Villafan H; Ruiz J; del Vedovo S; Neeser JR  
Division of Microbiology, National Institute of Public Health,  
Cuernavaca, Mexico.

Journal of infectious diseases (UNITED STATES) Jun 1991, 163 (6)  
p1247-55, ISSN 0022-1899 Journal Code: IH3

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

Subfile: AIM; INDEX MEDICUS

Secretory IgA (sIgA) purified from colostrum and breast milk obtained from 14 women inhibited the localized adherence of an enteropathogenic *Escherichia coli* (EPEC) to HEp-2 cells. Inhibition decreased as lactation continued even when the concentration of sIgA was maintained constant at 1 mg/ml. sIgA responded to a 94 - kDa plasmid-encoded outer membrane protein implicated as the EPEC adherence factor. An oligosaccharide-enriched fraction (OEF) from these samples also inhibited the attachment of this EPEC. Inhibition by OEFs decreased as lactation continued because of a general reduction in oligosaccharide content. Localized adherence of six other EPEC was also inhibited by sIgA and OEF, whereas attachment of isolates with diffuse or aggregative adherence was not inhibited by these fractions. Experiments with purified oligosaccharide fractions revealed that EPEC attach to HEp-2 cells through a carbohydrate-mediated mechanism based on the preferential recognition of fucosylated residues in human milk.

Tags: Female; Human; Support, Non-U.S. Gov't

STEM:OS - DIALOG OneSearch

- File 5: Biosis Previews(R) 1969-2001/Jul W5  
(c) 2001 BIOSIS
- File 34: SciSearch(R) Cited Ref Sci 1990-2001/Aug W1  
(c) 2001 Inst for Sci Info
- File 35: Dissertation Abs Online 1861-2001/Jul  
(c) 2001 ProQuest Info&Learning
- File 48: SPORTDiscus 1962-2001/Jun  
(c) 2001 Sport Information Resource Centre
- File 65: Inside Conferences 1993-2001/Aug W1  
(c) 2001 BLDSC all rts. reserv.
- \*File 65: For variance in UD's please see Help News65.
- File 71: ELSEVIER BIOBASE 1994-2001/Aug W1  
(c) 2001 Elsevier Science B.V.
- File 73: EMBASE 1974-2001/Jul W5  
(c) 2001 Elsevier Science B.V.
- \*File 73: For information about Explode feature please see Help News73.
- File 77: Conference Papers Index 1973-2001/Jul  
(c) 2001 Cambridge Sci Abs
- File 91: MANTIS(TM) 1880-2000/Apr  
1999 (c) Action Potential
- File 94: JICST-EPlus 1985-2001/Jul W2  
(c) 2001 Japan Science and Tech Corp(JST)
- \*File 94: There is no data missing. UD's have been adjusted to reflect the current months data. See Help News94 for details.
- File 98: General Sci Abs/Full-Text 1984-2001/Jun  
(c) 2001 The HW Wilson Co.
- File 144: Pascal 1973-2001/Aug W1  
(c) 2001 INIST/CNRS
- File 149: TGG Health&Wellness DB(SM) 1976-2001/Jul W5  
(c) 2001 The Gale Group
- File 151: HealthSTAR 1975-2000/Dec  
(c) format only 2000 The Dialog Corporation
- \*File 151: Final updates for this file have been loaded and the file is now closed. Please see Help News151 for changes to the file.
- File 155: MEDLINE(R) 1966-2001/Aug W4
- File 156: Toxline(R) 1965-2000/Dec  
(c) format only 2000 The Dialog Corporation
- \*File 156: This file is closed (no updates). For toxicology search strategy and changes to the file please see Help News156.
- File 157: Aidsline(R) 1980-2000/Dec  
(c) format only 2000 The Dialog Corporation
- \*File 157: Final updates for this file have been loaded and the file is now closed. Please see Help News157 for changes to the file.
- File 159: Cancerlit 1975-2001/Jun  
(c) format only 2001 Dialog Corporation
- \*File 159: This file has been reloaded. Accession Numbers have changed.
- File 162: CAB HEALTH 1983-2001/Jun  
(c) 2001 CAB INTERNATIONAL
- \*File 162: Truncating CC codes is recommended for full retrieval. See Help News162 for details.
- File 164: Allied & Complementary Medicine 1984-2001/Aug  
(c) 2001 BLHCIS
- File 172: EMBASE Alert 2001/Aug W1  
(c) 2001 Elsevier Science B.V.
- File 266: FEDRIP 2001/Jul  
Comp & dist by NTIS, Intl Copyright All Rights Res
- File 369: New Scientist 1994-2001/Jul W3  
(c) 2001 Reed Business Information Ltd.
- File 370: Science 1996-1999/Jul W3  
(c) 1999 AAAS
- \*File 370: This file is closed (no updates). Use File 47 for more current information.
- File 399: CA SEARCH(R) 1967-2001/UD=13506  
(c) 2001 AMERICAN CHEMICAL SOCIETY
- \*File 399: Use is subject to the terms of your user/customer agreement.

Immunization with live *aroA* recombinant *Salmonella typhimurium* producing  
invasin inhibits intestinal translocation of *Yersinia*  
*pseudotuberculosis*.

Simonet M; Fortineau N; Beretti JL; Berche P

Laboratoire de Microbiologie, INSERM U411, Faculte de Medecine  
Necker-Enfants Malades, Paris, France.

Infection and immunity (UNITED STATES) Mar 1994, 62 (3) p863-7,  
ISSN 0019-9567 Journal Code: GO7

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

Subfile: INDEX MEDICUS

The *Yersinia pseudotuberculosis* *inv* gene encodes *invasin*, a 103-kDa outer membrane protein that allows bacteria to enter mammalian cells. The gene was subcloned into the attenuated *aroA* mutant of *Salmonella typhimurium* SL3261. *Invasin* was produced by the recombinant *Salmonella* strain and increased the ability of microorganisms to translocate from the intestinal lumen to the mesenteric lymph nodes. Specific antibodies for *invasin* were detected in sera and intestinal secretions of mice following oral immunization with the live *Inv+* *Salmonella* strain. The immunization strongly inhibited intestinal translocation of *Y. pseudotuberculosis* when this pathogen was inoculated to mice but failed to prevent *Yersinia* dissemination from the gut lymphoid tissue.

Tags: Animal; Female; Support, Non-U.S. Gov't

**Expression and characterization of the eaeA gene product of Escherichia coli serotype O157:H7.**

Louie M; de Azavedo JC; Handelsman MY; Clark CG; Ally B; Dytoc M; Sherman P; Brunton J

Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Ontario, Canada.

Infection and immunity (UNITED STATES) Oct 1993, 61 (10) p4085-92, ISSN 0019-9567 Journal Code: G07

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

Subfile: INDEX MEDICUS

In enteropathogenic Escherichia coli, the eaeA gene produces a 94 -kDa outer membrane protein called **intimin** which has been shown to be necessary but not sufficient to produce the **attaching -and-effacing** lesion. The purpose of this study was to characterize the **intimin** specified by the eaeA allele of the enterohemorrhagic E. coli (EHEC) serotype O157:H7 strain CL8 and to determine its role in adherence. The carboxyl-terminal 266 amino acids of the CL8 **intimin** were expressed as a protein fusion with glutathione S-transferase, which was used to raise antiserum in rabbits. The antiserum reacted in Western immunoblots with a 97 - kDa outer membrane protein of EHEC strains of serogroups O5, O26, O111, and O157 and enteropathogenic E. coli strains of serogroups O55 and O127. Surface labelling of CL8 with 125I showed that **intimin** was surface exposed. An eaeA insertional inactivation mutant of CL8 was produced and was designated CL8-KO1. Total adherence of CL8-KO1 to HEp-2 cells was not significantly different from that of CL8, but CL8-KO1 gave a negative result in the fluorescent actin staining test. The eaeA gene expressed alone in E. coli HB101 also gave a negative fluorescent actin staining test result. The eaeA gene of CL8 was able to complement the eaeA deletion mutation in CVD206. We conclude that the product of the EHEC eaeA gene is a 97 - kDa surface-exposed protein and propose that it be designated **intiminO157**. Sherman et al. described a 94 -kDa outer membrane protein which played an important role in adherence of E. coli O157:H7 (Infect. Immun. 59:890-899, 1991). Western immunoblotting and indirect fluorescent antibody studies showed that the protein described by Sherman et al. is not **intimin**.

**le: IDENTIFICATION OF EAEA PROTEIN IN THE OUTER-MEMBRANE OF ATTACHING  
AND EFFACING ESCHERICHIA- COLI 045 FROM PIGS**

Author(s): ZHU CR; HAREL J; DUMAS F; FAIRBROTHER JM

Corporate Source: UNIV MONTREAL, FAC VET MED, RECH MALAD INFECT PORC GRP, CP  
5000/ST HYACINTHE/PQ J2S 7C6/CANADA/; UNIV MONTREAL, FAC VET MED, RECH  
MALAD INFECT PORC GRP/ST HYACINTHE/PQ J2S 7C6/CANADA/; NATL RES COUNCIL  
CANADA, BIOTECHNOL RES INST/MONTREAL/PQ H4P 2R2/CANADA/

Journal: FEMS MICROBIOLOGY LETTERS, 1995, V129, N2-3 (JUN 15), P237-242

ISSN: 0378-1097

Language: ENGLISH Document Type: ARTICLE

Geographic Location: CANADA

Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences

Journal Subject Category: MICROBIOLOGY

**Abstract:** We have previously reported that the production of **attaching** and **effacing** lesions by *Escherichia coli* 045 isolates from pigs is associated with the *eaeA* (*E. coli attaching* and *effacing*) gene. In the present study, expression of the *EaeA* protein, the *eaeA* gene product, among swine 045 *E. coli* isolates was examined. The majority (20/22) of **attaching** and **effacing** positive, *eaeA*(+) *E. coli* 045 isolates, but none of ten **attaching** and **effacing** negative, *eaeA*(-) or *eaeA*(+) isolates, expressed a 97 -kDa outer membrane protein as revealed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and Western blot analysis. Amino-terminal amino acid sequencing demonstrated a high homology between this 97 -kDa protein of swine *E. coli* 045 and the *EaeA* protein (*intimin*) of human enteropathogenic *E. coli* and enterohemorrhagic *E. coli*. In addition, a serological relationship between the *EaeA* proteins of swine 045, rabbit (RDEC-1) and human (E2348/69) **attaching** and **effacing** *E. coli* strains was observed. Our results indicate an association between expression of the *EaeA* protein and attaching and effacing activity among 045 *E. coli* isolates. The data also suggest an antigenic relatedness of the *EaeA* proteins of swine, rabbit, and human **attaching** and **effacing** *E. coli*.

tle: IMMUNOCOMPROMISE IN GNOTOBIOTIC PIGS INDUCED BY VEROTOXIN-PRODUCING  
ESCHERICHIA- COLI (O111 NM)

Author(s): CHRISTOPHERHENNINGS J; WILLGOHS JA; FRANCIS DH; RAMAN UAK;  
MOXLEY RA; HURLEY DJ

Corporate Source: S DAKOTA STATE UNIV,DEPT VET SCI/BROOKINGS//SD/57007; S  
DAKOTA STATE UNIV,DEPT VET SCI/BROOKINGS//SD/57007; S DAKOTA STATE  
UNIV,DEPT BIOL MICROBIOL/BROOKINGS//SD/57007; UNIV NEBRASKA,DEPT VET  
SCI/LINCOLN//NE/68588

Journal: INFECTION AND IMMUNITY, 1993, V61, N6 (JUN), P2304-2308

ISSN: 0019-9567

Language: ENGLISH Document Type: ARTICLE

Geographic Location: USA

Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences

Journal Subject Category: IMMUNOLOGY; INFECTIOUS DISEASES

Abstract: A verotoxin-producing Escherichia coli serotype O111:NM strain  
(strain 10049; verotoxin 1 positive) persistently infected  
experimentally inoculated gnotobiotic pigs, causing **attaching -  
effacing** intestinal lesions and chronic diarrhea. Experiments were  
performed to determine whether persistent infection might be associated  
with immunocompromise of the host by this organism. Pigs inoculated  
with this strain had a significant reduction in peripheral blood  
lymphocytes and lower antibody titers to sheep erythrocytes compared  
with control pigs. Compared with pigs given a verotoxin-negative  
pathogenic strain of the same serotype (O111:NM, strain 2430), pigs  
inoculated with the verotoxin-positive strain had lower peripheral  
lymphocyte counts and proliferative responses to concanavalin A,  
phytohemagglutinin, and pokeweed mitogens. The results of this study  
suggest that strain 10049 has an immunocompromising effect on  
gnotobiotic pigs.



**Title: INTERACTIONS BETWEEN YERSINIA-ENTEROCOLITICA AND THE HOST WITH  
SPECIAL REFERENCE TO VIRULENCE PLASMID ENCODED ADHESION AND HUMORAL  
IMMUNITY**

Author(s): PAERREGAARD A

Corporate Source: HOJBJERG VANG 54/DK-2840 HOLTE//DENMARK/;  
RIGSHOSP, STATENS SERUMINST, DEPT CLIN MICROBIOL/DK-2100  
COPENHAGEN//DENMARK/

Journal: DANISH MEDICAL BULLETIN, 1992, V39, N2 (APR), P155-172

Language: ENGLISH Document Type: REVIEW

Geographic Location: DENMARK

Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences; CC CLIN--  
Current Contents, Clinical Medicine

Journal Subject Category: MEDICINE, GENERAL & INTERNAL

Identifiers--KeyWords Plus: LINKED-IMMUNOSORBENT-ASSAY; TRIGGERED REACTIVE  
ARTHRITIS; TOXIGENIC ESCHERICHIA-COLI; MOUSE LARGE-INTESTINE;  
PSEUDOTUBERCULOSIS **INVASIN** PROTEIN; BORDER MEMBRANE-VESICLES;  
CULTURED MAMMALIAN-CELLS; **IGA** -ANTIBODIES; ENTEROPATHOGENIC YERSINIA;  
MONOCLONAL-ANTIBODIES

Research Fronts: 90-0569 004 (INFLAMMATORY BOWEL-DISEASE; COLON CANCER  
SURVEILLANCE; BARRETT'S MUCOSA)

90-0157 001 (SURFACE FREE-ENERGY; CONTACT ANGLES; BACTERIAL ADHESION;  
INTERFACE OF 2 IMMISCIBLE LIQUIDS; MICELLE FORMATION; LINE TENSION;  
RED-BLOOD-CELL AGGREGATION)

90-0377 001 (REACTIVE ARTHRITIS; INFLAMMATORY RHEUMATIC DISEASES;  
HLA-B27 IN SPONDYLOARTHROPATHIES; MOLECULAR MIMICRY)

90-0623 001 (FECAL GIARDIA ANTIGENS; EPIDEMIOLOGY OF FOODBORNE DISEASE;  
AXENIC CULTURE; TRANSFUSION-ASSOCIATED YERSINIA-ENTEROCOLITICA; STRING  
TEST; CAPTURE ELISA)

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HUMAN CLINICAL ISOLATES; INVITRO ADHESION)

Attaching and effacing activities of rabbit and human

enteropathogenic Escherichia coli in pig and rabbit intestines

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Three strains of enteropathic Escherichia coli (EPEC), originally isolated from humans and previously shown to cause diarrhea in human volunteers by unknown mechanisms, and one rabbit EPEC strain were shown to **attach** intimately to and **efface** microvilli and cytoplasm from intestinal epithelial cells in both the pig and rabbit intestine. The **attaching** and **effacing** activities of these EPEC were demonstrable by light microscopic examination of routine histological sections and by transmission electron microscopy. It was suggested that intact **colostrum**-deprived newborn pigs and ligated intestinal loops in pigs and rabbits may be useful systems to detect EPEC that have **attaching** and **effacing** activities and for studying the pathogenesis of such infections. The lesions (**attachment** and **effacement**) produced by EPEC in these systems were multifocal, with considerable animal-to-animal variation in response to the same strain of EPEC. The EPEC strains also varied in the frequency and extent of lesion production. For example, three human EPEC strains usually caused extensive lesions in rabbit intestinal loops, whereas two other human EPEC strains usually did not produce lesions in this system.